



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

July 29, 2011

Mr. Sam Belcher
Vice President Nine Mile Point
Nine Mile Point Nuclear Station, LLC
P.O. Box 63
Lycoming, NY 13093

SUBJECT: NINE MILE POINT NUCLEAR STATION - NRC INTEGRATED INSPECTION
REPORT 05000220/2011003 AND 05000410/2011003

Dear Mr. Belcher:

On June 30, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Nine Mile Point Nuclear Station Units 1 and 2. The enclosed inspection report documents the inspection results, which were discussed on July 28, 2011, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents one self-revealing finding of very low safety significance (Green). The finding was determined not to involve a violation of NRC requirements. If you disagree with the cross-cutting aspect assigned to the finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC Senior Resident Inspector at Nine Mile Point Nuclear Station.

In accordance with 10 CFR Part 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the

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Sincerely,

A handwritten signature in black ink, reading "Glenn T. Dentel". The signature is fluid and cursive, with the first name "Glenn" and last name "Dentel" clearly legible.

Glenn T. Dentel, Chief
Projects Branch 1
Division of Reactor Projects

Docket Nos.: 50-220, 50-410
License Nos.: DPR-63, NPF-69

Enclosure: Inspection Report 05000220/2011003 and 05000410/2011003
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Sincerely,

/RA/

Glenn T. Dentel, Chief
Projects Branch 1
Division of Reactor Projects

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.: 50-220, 50-410

License No.: DPR-63, NPF-69

Report No.: 05000220/2011003; 05000410/2011003

Licensee: Nine Mile Point Nuclear Station, LLC (NMPNS)

Facility: Nine Mile Point, Units 1 and 2

Location: Oswego, NY

Dates: April 1 through June 30, 2011

Inspectors: K. Kolaczyk, Senior Resident Inspector
D. Dempsey, Resident Inspector
J. Caruso, Senior Operations Engineer
N. Perry, Senior Project Engineer
S. Shaffer, Senior Resident Inspector
J. Furia, Senior Health Physicist
E. Gray, Senior Reactor Inspector
B. Fuller, Operations Engineer
B. Haagensen, Resident Inspector
T. O'Hara, Reactor Engineer

Approved By: Glenn T. Dentel, Chief
Projects Branch 1
Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000220/2011003, 05000410/2011003; 04/01/2011 - 06/30/2011; Nine Mile Point Nuclear Station, Units 1 and 2; Followup of Events and Notices of Enforcement Discretion.

The report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. One Green finding was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process (SDP)." The cross-cutting aspects for the findings were determined using IMC 0310, "Components Within the Cross-Cutting Areas." Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

Cornerstone: Initiating Events

- Green. A Green self revealing finding for inadequate procedural guidance was identified. The inadequate procedural guidance resulted in a May 2, 2011 Nine Mile Unit 1 scram due to a turbine trip. NMPNS determined that the turbine tripped when the main turbine master trip solenoid (MTS) actuated due to pressure fluctuations caused by a combination of leaking oil supply fittings to the MTS; binding of the secondary speed relay linkages, and main shaft lube oil discharge pressure fluctuations. These degraded conditions occurred because the governing work control documents and procedures that were implemented during the spring 2011 refuel outage contained inadequate detail and guidance. NMPNS corrective actions included repairing the degraded components and initiating actions to revise the procedures.

This finding is more than minor because it affected the procedure quality attribute of the Initiating Events Cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding was of very low safety significance because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. This finding has a cross-cutting aspect in the area of human performance in that NMPNS did not ensure that complete and accurate and up-to-date design documentation and procedures were available to implement turbine maintenance during the spring 2011 refuel outage. (H.2(c) per IMC 0310). (Section 4OA3)

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REPORT DETAILS

Summary of Plant Status

Nine Mile Point Unit 1 began the inspection period in cold shutdown while completing refueling outage (RFO) 21 which commenced on March 20. On April 18, the reactor was taken critical and the turbine was synchronized to the grid on April 19. Full rated thermal power (RTP) was reached on April 21. On April 26, reactor power was reduced to approximately 45 percent to facilitate troubleshooting the main turbine shaft-driven feedwater pump. On April 30, reactor power was increased to 80 percent but was subsequently reduced again later in the day to approximately 47 percent due to high vibrations on the main turbine shaft-driven feedwater pump. Reactor power remained at 47 percent until May 2 when a reactor scram occurred when the main turbine tripped due to pressure fluctuations in the turbine control oil system. On May 17, following the completion of repairs to the main turbine bearings and reduction gears, the reactor was taken critical. On May 18, the main turbine was synchronized to the grid. Full RTP was reached on May 20. On May 26, reactor power was decreased to approximately 79 percent when the level control system for the 135 feedwater heater malfunctioned. Reactor power was restored to full RTP on May 27. On June 25, reactor power was decreased to 85 percent to place the 14 reactor recirculation pump into service. The plant was restored to full RTP later that day.

Nine Mile Point Unit 2 began the inspection period at full RTP. On April 16, power was reduced to 85 percent in response to a main generator temperature trouble alarm. The alarm condition was corrected and power was restored to RTP later that day. On June 4, plant power was reduced to 65 percent for rodline adjustment and to swap feedwater pumps. The plant was restored to full RTP on June 5 and remained at full RTP for the rest of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness of Offsite and Onsite AC Power Systems (One sample)

a. Inspection Scope

The inspectors verified that plant features and procedures for operation, and continued availability of offsite and onsite alternating current (AC) power systems for Units 1 and 2 during adverse weather were appropriate. The inspectors reviewed Operations Administrative Procedure S-ODP-OPS-0112, "Off-Site Power Operations and Interface," to ensure that appropriate information is exchanged between NMPNS and the transmission system operator when issues arise that could impact the offsite power system. The inspectors also verified that NMPNS procedures address measures to monitor and maintain availability and reliability of both the offsite AC power system and the onsite AC power system prior to and during adverse weather conditions.

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b. Findings

No findings were identified.

.2 Readiness to Cope with External Flooding (One sample)

a. Inspection Scope

The inspectors reviewed the updated final safety analysis report (UFSAR) for Units 1 and 2, and the Unit 1 individual plant examination, concerning external flooding events at the site. The inspection included a walkdown of accessible areas of the site perimeter to look for potential susceptibilities to external flooding and to verify the assumptions included in each Unit's external flooding analysis. The inspectors also reviewed relevant abnormal and emergency plan procedures.

b. Findings

No findings were identified.

.3 Readiness for Seasonal Extreme Weather Conditions (Two samples)

a. Inspection Scope

The inspectors verified the seasonal readiness for Units 1 and 2 in accordance with NMPNS procedure NAI-PSH-11, "Seasonal Readiness Program," Revision 06. The inspectors reviewed and verified completion of the operations department hot weather preparation checklists contained in procedures N1-OP-64, Revision 00200, and N2-OP-102, Revision 00800, "Meteorological Monitoring," for Units 1 and 2, respectively. The inspectors reviewed the procedural limits and actions associated with elevated lake temperature and walked down selected areas of the plants to assess the effectiveness of the ventilation systems. The inspectors also reviewed the UFSARs to ensure that required systems that can be affected by hot weather were addressed by the procedures. In addition, the inspectors performed partial system walkdowns of the following systems that could be susceptible to, or exacerbate, the effects of hot weather:

- Unit 1 service water (SW) system;
- Unit 1 control room chillers;
- Unit 2 control building chilled water system; and
- Unit 2 SW system.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04).1 Partial System Walkdown (71111.04Q - Four samples)a. Inspection Scope

The inspectors performed partial system walkdowns to verify that risk-significant systems were properly aligned for operation. The inspectors verified the operability and alignment of these risk-significant systems while their redundant trains or systems were inoperable or out of service for maintenance. The inspectors compared system lineups to system operating procedures, system drawings, and the applicable chapters in the UFSAR. The inspectors verified the operability of critical system components by observing component material condition during the system walkdown.

The following plant system alignments were reviewed:

- Unit 1 offsite power line four while offsite power line one was out of service for planned maintenance activities;
- Unit 1 103 emergency diesel generator (EDG) and switchgear while 102 EDG was out of service for planned maintenance;
- Unit 1 11 control rod drive subsystem when the 11 High Pressure Coolant Injection (HPCI) system was in a protected status because of water in the oil of the 13 condensate pump upper motor bearing; and
- Unit 2 Divisions I and II EDGs and reactor core isolation cooling system while Division III EDG and high pressure core spray system were out of service for planned maintenance.

b. Findings

No findings were identified.

.2 Complete System Walkdown (71111.04S – One sample)a. Inspection Scope

The inspectors performed a complete walkdown of the Unit 1 control room heating ventilation and air conditioning system to identify discrepancies between the existing equipment configuration and that specified in the design documents. During the walkdown, system drawings and operating procedures were used to determine the proper equipment alignment and operational status. The inspectors reviewed the open maintenance work orders (WOs) that could affect the ability of the system to perform its functions. Documentation associated with temporary modifications, operator workarounds, and items tracked by plant engineering were also reviewed to assess their collective impact on system operation. In addition, the inspectors reviewed the condition report (CR) database to verify that equipment alignment problems were being identified and appropriately resolved.

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b. Findings

No findings were identified.

1R05 Fire Protection (71111.05).1 Routine Resident Inspector Tours (71111.05Q – Six samples)a. Inspection Scope

The inspectors toured areas important to reactor safety to evaluate the station's control of transient combustibles and ignition sources, and to examine the material condition, operational status, and operational lineup of fire protection systems including detection, suppression, and fire barriers. The inspectors evaluated fire protection attributes using the criteria contained in Unit 1 UFSAR Appendix 10A, "Fire Hazards Analysis," Unit 2 UFSAR Appendix 9B, "Safe Shutdown Evaluation," and the applicable pre-fire plans. The areas inspected included:

- Unit 1 core spray pump room (112, 122) general floor area, east reactor building (RB) 198 and 237 foot elevations (fire zone R1A);
- Unit 1 drywell entrance, RB 237 foot elevation;
- Unit 1 battery board rooms 11 and 12, turbine building) 261 foot elevation;
- Unit 2 Division I switchgear room, control building 261 foot elevation;
- Unit 2 Division I EDG room, diesel generator building fire area 28; and
- Unit 2 remote shutdown rooms, control building 261 foot elevation.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07).1 Annual Heat Sink Performance (71111.07A - Two samples)a. Inspection Scope

The inspectors conducted a walkdown of the Units 1 and 2 spent fuel pool cooling heat exchanger rooms. The inspectors reviewed NMPNS's procedures for controlling biofouling of the RB closed cooling water system which cools the Units 1 and 2 spent fuel pool cooling heat exchangers. The inspectors also reviewed the eddy current inspection and visual inspection results of the inspections performed on the Unit 1 fuel pool cooling heat exchanger completed during a January 2011 maintenance outage. The inspectors verified that NMPNS was following Electric Power Research Institute (EPRI) document NP-7552 guidance for maintenance practices for the spent fuel pool cooling heat exchangers at Units 1 and 2.

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b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (71111.08 – One sample)

a. Inspection Scope

During the NMPNS Unit 1 refuel outage 21 (1RFO21) the inspector observed a selected sample of nondestructive examination (NDE) activities in process. Also, the inspector reviewed the records of selected additional samples of completed NDE. The sample selection was based on the inspection procedure objectives and risk priority of those components and systems where degradation would result in a significant increase in risk of core damage. The inspector observations and documentation reviews were performed to verify that the activities inspected were performed in accordance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code.

The inspector reviewed preparations and procedures for several applications of ultrasonic testing (UT) and visual testing (VT) NDE processes. The condition of the exterior surface of the torus, torus supports and the drywell sand bed drains were visually inspected to confirm the observations of the plant staff. The plant site did not perform any welding or radiographic testing of safety related pressure boundary components during this outage.

The inspector observed UT and VT data analysis in progress, interviewed the NDE examiners and reviewed the applicable work packages, procedures, inspection data sheets and documentation for these activities. This part of the inspection was to verify the effectiveness of the NDE examiner, process, and equipment in identifying the condition or degradation of risk significant systems, structures and components and to evaluate the activities for compliance with the requirements of ASME Code, Section XI.

Section XI Repair/Replacement Samples:

There were no ASME Section XI Repair/Replacement activities available for inspection during RFO21.

Re-examination of an Indication Previously Accepted For Service After Analysis:

The inspector reviewed RFO21 examinations of indications from previous outage inspections. These included various in-vessel component VT indications and a UT indication in the dissimilar metal weld N2D, which was noted to be unchanged since the previous UT examination.

b. Findings

No findings were identified.

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1R11 Licensed Operator Regualification Program (71111.11).1 Quarterly Review (71111.11Q - Two samples)a. Inspection Scope

The inspectors evaluated two simulator scenarios in the licensed operator regualification training (LORT) program. The inspectors assessed the clarity and effectiveness of communications, the implementation of appropriate actions in response to alarms, the performance of timely control board operations, the oversight and direction provided by the shift manager, and the performance of risk significant operator actions including the use of special operating procedures (SOPs) and emergency operating procedures (EOPs). During the scenarios, the inspectors also compared simulator performance with actual plant performance in the control room. The following scenarios were observed:

- On May 10, 2011 the inspector observed a Unit 2 LORT simulator scenario to assess operator and instructor performance. The scenario involved a loss of the on-line control rod drive pump suction filter, an inadvertent Division I emergency core cooling system signal which caused the 'A' residual heat removal and low-pressure core spray pumps to start, an inadvertent opening of an automatic depressurization valve, and a leak in the reactor water cleanup system.
- On May 17, 2011, the inspector observed a Unit 1 LORT simulator scenario to assess operator and instructor performance. The scenario involved a loss of a RB closed loop cooling pump, closure of a turbine control valve, and a leak in the reactor water cleanup system.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q - Three samples)a. Inspection Scope

The inspectors reviewed performance-based problems, and the performance and condition history of selected systems and structures to assess the effectiveness of the maintenance program. The inspectors reviewed the systems to ensure that NMPNS review focused on proper maintenance rule scoping in accordance with Title 10, Code of Federal Regulations (10 CFR) Part 50.65, characterization of reliability issues, tracking system and component unavailability, and 10 CFR Part 50.65(a)(1) and (a)(2) classification. In addition, the inspectors reviewed NMPNS ability to identify and address common cause failures, and to trend key parameters. The following maintenance rule inspection samples were reviewed.

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- Unit 1 diesel driven fire pump;
- Unit 2 control room ventilation chiller system; and
- Unit 2 process and area radiation monitoring systems.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - Six samples)

a. Inspection Scope

The inspectors evaluated the effectiveness of the maintenance risk assessments required by 10 CFR Part 50.65(a)(4). The inspectors reviewed equipment logs, work schedules, and performed plant tours to verify that actual plant configuration matched the assessed configuration. Additionally, the inspectors verified that risk management actions for both planned and emergent work were consistent with those described in station procedures. The inspectors reviewed risk assessments for the activities listed below.

Unit 1

- Week of May 2, that involved a reactor scram and subsequent plant cooldown to cold shutdown followed by troubleshooting the main turbine and generator control systems.
- Week of May 9, that involved planned maintenance on offsite power line 4, unplanned maintenance on the main turbine and generator systems, and surveillance testing on the control rod and reactor protection systems.
- Week of May 16, that involved an unplanned loss of offsite power line 1 and the Unit 2 internal building supply power loop, and a planned startup of Unit 1 following the May 2 reactor scram.
- Week of June 20, that involved planned maintenance on the reactor water cleanup system, surveillance testing on the number 11 standby liquid control pump, and a declared unusual event (UE) caused by a fire in a non safety-related switchboard located in TB level 277.

Unit 2

- Week of May 30, that involved planned maintenance on the main generator exciter and the arrival of adverse weather thunderstorm with accompanying high winds.

- Week of June 20, 2011, that involved a planned EDG control room temperature loop calibration for 2HVP*TIS13A which required the Division I EDG to be declared inoperable.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 - Six samples)

a. Inspection Scope

The inspectors evaluated the acceptability of operability evaluations, the use and control of compensatory measures, and compliance with technical specifications (TSs.) The evaluations were reviewed using criteria specified in NRC Regulatory Issue Summary 2005-20, "Revision to Guidance Formerly Contained in NRC Generic Letter 91-18, 'Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability'," and Inspection Manual Part 9900, "Operability Determinations and Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety." The inspectors' reviews included verification that the operability determinations were made as specified by Procedure CNG-OP-1.01-1002, "Conduct of Operability Determinations / Functionality Assessments," Revision 00101. The technical adequacy of the determinations reviewed and compared to the TSs, UFSAR, and associated design basis documents (DBDs). The following evaluations were reviewed:

- CR 2007-007255, concerning a spurious discharge of carbon dioxide in the Division III switchgear room at Unit 2;
- CR 2011-004557, concerning the lack of position indication for control rod 38-35 when it is driven beyond the full in position;
- CR 2011-005896, concerning failure of 11 liquid poison pump monthly flow rate test;
- CR 2011-005008, concerning water found in upper motor bearing for the 13 condensate pump;
- CR 2011-005167, concerning structural supports on the Unit 1 control room ventilation system; and
- CR 2011-004016, concerning ERV-122 tailpipe temperature above 200 degrees after valve cycling.

b. Findings

No findings were identified.

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1R19 Post-Maintenance Testing (71111.19 - Four samples)a. Inspection Scope

The inspectors reviewed the post maintenance tests (PMTs) listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed the test procedure to verify that the procedure adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure were consistent with information in the applicable licensing basis and/or DBDs, and that the procedure had been properly reviewed and approved. The inspectors also witnessed the test or reviewed test data, to verify the test results adequately demonstrated restoration of the affected safety functions.

- Unit 1 WO C91269745 to disassemble, inspect, repair a bonnet leak on IV-39-07R and IV-39-08R. The PMT was to verify correct valve stroke time using N1-NMP-039-217, "Maintenance of Emergency Condenser Isolation Valves," Revision 00201.
- Unit 1 WO C91236257 to inspect and clean seal areas of valves IV-201-31 and IV-201-32. The PMT was to verify leakage was within allowed values using N1-ISP-LRT-TYC, "Type C Containment Local Leak Rate Test," Revision 0700.
- Unit 1 WO C91115690 to replace 102 EDG cooling water pump 79-53. The PMT was to verify hydraulic performance using N1-ST-Q25, "Emergency Diesel Generator Cooling Water Quarterly Test," Revision 01702 and N1-PM-V2, "Pump Curve Validation Test," Revision 00701.
- Unit 1 WO C90697642, to disassemble, inspect, and test the main generator exciter and associated equipment including the main turbine shaft Faulk insulating coupling. The PMT for the insulating coupling was to perform testing as described in the vendor manual GEK 7607.

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20 - One sample).1 Unit 1 Refueling Outagea. Inspection Scope

The inspectors observed and/or reviewed the following Unit 1 RFO activities to verify that operability requirements were met and that risk, industry experience, and previous site-specific problems were considered.

- The inspectors met with the fatigue program administrator and reviewed how worker's hours would be managed and how the program would be used to monitor fatigue during the outage for Units 1 and 2. To ensure fatigue program

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requirements were satisfied, the inspectors reviewed a sample of work hours for personnel in the operations, and maintenance departments.

- Configuration management, including maintenance of defense in depth, for reactor plant and spent fuel pool cooling, and secondary containment, consistent with the outage safety plan for key safety functions and compliance with the applicable TSs when taking equipment out of service;
 - Status and configuration of electrical systems to ensure that TSs and outage planning requirements were met and controls over switchyard activities were appropriate.
 - The inspectors periodically toured the drywell to assess the general condition of equipment and components and verify appropriate housekeeping controls were in place. Prior to plant startup, a drywell closeout inspection was conducted to verify outage related material had been removed from the drywell.
-
- The inspectors observed the reactor coolant system hydrostatic test. As part of the review the inspectors verified NMPNS personnel were accurately tracking discrepant conditions and implementing adequate corrective action where appropriate.
 - Following the outage, the inspectors observed portions of the reactor plant startup and verified through observations in the control room and tours of the plant that safety-related systems had been restored to an operable status.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 - Five samples)

a. Inspection Scope

The inspectors witnessed performance of and/or reviewed test data for risk-significant STs to assess whether the components and systems tested satisfied design and licensing basis requirements. The inspectors verified that test acceptance criteria were clear, demonstrated operational readiness and were consistent with the DBDs; that test instrumentation had current calibrations and the range and accuracy for the application; and that tests were performed, as written, with applicable prerequisites satisfied. Upon test completion, the inspectors verified that equipment was returned to the status specified to perform its safety function.

The following STs were reviewed:

- N1-ST-Q6D, "Containment Spray System Loop 122 Quarterly Operability Test," Revision 00801;
- N1- ST-R30, "Reactor Pressure Vessel and ASME Class 1 System Leakage Test," Revision 00600;
- N1-TTP-054, "Control Room Tracer Gas Testing," Revision 00;
- N1-ST-Q1D, "CS 122 Pump and Valve Operability Test," Revision 00600; and
- N2-TTP-RCS-001, "Reactor Recirculation System Full Flow Test," Revision 00100.

This represented a total of five inspection samples, of which three were Routine Surveillances, and two were In-Service Tests as defined by Inspection Procedure 71111.22.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06 - One sample)

a. Inspection Scope

On May 10, 2011, the inspectors observed a Unit 2 licensed operator simulator scenario that included a limited test of NMPNS's emergency response plan. The inspectors verified that emergency classification declarations and notifications were completed in accordance with 10 CFR Part 50.72, 10 CFR Part 50 Appendix E, and NMPNS emergency response procedures.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational/Public Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

a. Inspection Scope

Radiological Hazard Assessment

The inspector selected radiologically risk-significant work activities that involved exposure to radiation. The inspector verified that appropriate pre-work surveys were performed which were appropriate to identify and quantify the radiological hazard and to

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establish adequate protective measures. The inspector evaluated the radiological survey program to determine if hazards were properly identified, including the following:

- Identification of hot particles;
- Presence of alpha emitters;
- Potential for airborne radioactive materials, including the potential presence of transuranics and/or other hard-to-detect radioactive materials;
- Hazards associated with work activities that could suddenly and severely increase radiological conditions; and
- Severe radiation field dose gradients that can result in nonuniform exposures of the body.

The inspector focused on activities related to the Unit 1 RFO (1RFO21).

The inspector selected air sample survey records and verified that samples were collected and counted in accordance with NMPNS procedures. The inspector observed work in potential airborne areas, and verified that air samples were representative of the breathing air zone. The inspector verified that NMPNS had a program for monitoring levels of loose surface contamination in areas of the plant with the potential for the contamination to become airborne.

Instructions to Workers

The inspector reviewed radiation work permits (RWPs) used to access high radiation areas (HRAs) and identify what work control instructions or control barriers had been specified. The inspector verified that allowable stay times or permissible dose for radiologically significant work under each RWP was clearly identified. The inspector verified that electronic personal dosimeter (EPD) alarm set points were in conformance with survey indications and plant policy.

Radiological Hazards Control and Work Coverage

During tours of the facility and review of ongoing work, the inspector evaluated ambient radiological conditions. The inspector verified that existing conditions were consistent with posted surveys, RWPs, and worker briefings, as applicable.

During job performance observations, the inspector verified the adequacy of radiological controls, such as required surveys, radiation protection job coverage, and contamination controls. The inspector evaluated NMPNSs means of using EPDs in high noise areas as HRA monitoring devices.

The inspector verified that radiation monitoring devices were placed on the individuals' body consistent with the method that NMPNS was employing to monitor dose from external radiation sources. The inspector verified that the dosimeters were placed in the location of highest expected dose.

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For high-radiation work areas with significant dose rate gradients (a factor of five or more), the inspector reviewed the application of dosimetry to effectively monitor exposure to personnel. The inspector verified that NMPNS controls were adequate.

The inspector reviewed RWPs for work within airborne radioactivity areas with the potential for individual worker internal exposures. The inspector evaluated airborne radioactive controls and monitoring, including potentials for significant airborne contamination. For these selected airborne radioactive material areas, the inspector verified barrier integrity and temporary high-efficiency particulate air ventilation system operation.

Radiation Worker Performance

During job performance observations, the inspector observed radiation worker performance with respect to stated radiation protection work requirements. The inspector verified that workers were aware of the significant radiological conditions in their workplace and the RWP controls/limits in place and that their performance reflected the level of radiological hazards present.

The inspector reviewed radiological problem reports since the last inspection that found the cause of the events to be human performance errors. The inspector assessed whether there was no observable pattern traceable to a similar cause. The inspector verified that this matched the corrective action approach taken by NMPNS to resolve the reported problems. The inspector discussed with the Radiation Protection Manager any problems with the corrective actions planned or taken.

b. Findings

No findings were identified.

2RS2 Occupational ALARA Planning and Controls (71124.02)

a. Inspection Scope

Verification of Dose Estimates and Exposure Tracking Systems

The inspector evaluated NMPNS's method of adjusting exposure estimates, or re-planning work, when unexpected changes in scope or emergent work were encountered. The inspector verified that adjustments to exposure estimates were based on sound radiation protection and as low as reasonably achievable (ALARA) principles. The inspector evaluated NMPNS's basis for adjusting the outage estimate for the Unit 1 RFO (1RFO21).

Radiation Worker Performance

The inspector observed radiation worker and radiation protection technician performance during work activities being performed in radiation areas, airborne radioactivity areas, or HRAs. The inspector concentrated on work activities that present the greatest

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radiological risk to workers. The inspector verified that workers demonstrate the ALARA philosophy in practice and that there were no procedure compliance issues. Also, the inspector observed radiation worker performance to determine whether the training and skill level was sufficient with respect to the radiological hazards and the work involved.

b. Findings

No findings were identified.

2RS3 In-Plant Airborne Radioactivity Control and Mitigation (71124.03)

a. Inspection Scope

Inspection Planning

The inspector reviewed the plant UFSAR to identify areas of the plant designed as potential airborne radiation areas and any associated ventilation systems or airborne monitoring instrumentation. The inspector reviewed the UFSAR for an overview of the respiratory protection program and a description of the types of devices used. The inspector reviewed the UFSAR, TSs, and emergency planning documents to identify the location and quantity of respiratory protection devices stored for emergency use. The inspector reviewed NMPNS's procedures for maintenance, inspection, and use of respiratory protection equipment including self-contained breathing apparatus. Additionally, the inspector reviewed procedures for air quality maintenance. The inspector reviewed the reported performance indicators (PI) to identify any related to unintended dose resulting from intakes of radioactive materials.

Engineering Controls – Ventilation: Permanent and Temporary

The inspector verified that NMPNS used ventilation systems as part of its engineering controls, in lieu of respiratory protection devices, to control airborne radioactivity. The inspector reviewed procedural guidance for use of installed plant systems, and verified that the systems were used, to the extent practicable, during high-risk activities. The inspector selected installed ventilation systems used to mitigate the potential for airborne radioactivity, and verified that ventilation airflow capacity, flow path, and filter/charcoal unit efficiencies were consistent with maintaining concentrations of airborne radioactivity in work areas below the concentrations of an airborne area to the extent practicable.

The inspector selected temporary ventilation system setups high-efficiency particulate air used to support work in contaminated areas. The inspector verified that the use of these systems was consistent with NMPNS procedural guidance and ALARA.

Airborne Monitoring Protocols

The inspector selected installed systems to monitor and warn of changing airborne concentrations in the plant. The inspector verified that alarms and set-points were sufficient to prompt NMPNS/worker action to ensure that doses were maintained within the limits of 10 CFR Part 20 and ALARA. The inspector verified that NMPNS had

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established trigger points for evaluating levels of airborne beta-emitting and alpha-emitting radionuclides.

Use of Respiratory Protection Devices

The inspector verified that NMPNS provided respiratory protective devices such that occupational doses are ALARA. As available, the inspector selected work activities where respiratory protection devices were used to limit the intake of radioactive materials, and verified that NMPNS performed an evaluation concluding that further engineering controls were not practical and that the use of respirators was ALARA. The inspector verified that NMPNS had established means to verify that the level of protection provided by the respiratory protection devices during use was at least as good as that assumed in NMPNS' work controls and dose assessment.

b. Findings

No findings were identified.

4. **OTHER ACTIVITIES**

4OA1 Performance Indicator Verification (71151 - Four samples)

a. Inspection Scope

The inspectors sampled NMPNS submittals for the PIs listed below. To verify the accuracy of the PI data reported during that period, the PI definition guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Indicator Guideline," Revision 6, was used to verify the basis in reporting for each data element.

Cornerstone: Barrier Integrity

The inspectors reviewed operator logs, plant computer data, and daily sampling and surveillance procedure results to verify the accuracy of NMPNS's reported reactor coolant system (RCS) PIs from April 2010 to March 2011.

- Unit 1 RCS leak rate;
- Unit 1 RCS specific activity;
- Unit 2 RCS leak rate; and
- Unit 2 RCS specific activity.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 - Two samples).1 Review of Items Entered into the Corrective Action Program (CAP)a. Inspection Scope

As specified by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily review of items entered into NMPNS's CAP. In accordance with the baseline inspection procedures, the inspectors also identified selected CAP items across the Initiating Events, Mitigating Systems, and Barrier Integrity cornerstones for additional follow-up and review. The inspectors assessed the threshold for problem identification, the adequacy of the cause analyses, and extent of condition review, operability determinations, and the timeliness of the specified corrective actions.

b. Findings

No findings were identified.

.2 Inservice Inspection Program Corrective Action Reviewa. Inspection Scope

The inspectors reviewed the November 23, 2010 Quality Assurance Audit Report of Special Processes and a sample of corrective action reports, listed in Attachment 3 which involved in-service inspection related activities, to confirm that non-conformances are being properly identified, reported and resolved.

b. Findings

No findings were identified.

.3 Unit 1 Reactor Building Emergency Ventilation (RBEV) and Unit 2 Standby Gas Treatment (SBGT) Testing Methodologya. Inspection Scope

NMPNS identified in CR 2009-001389, that the Unit 1 RBEV drawdown surveillance test is impacted by wind speed. As a result, the Unit 1 RBEV drawdown surveillance test requires delta pressure (D/P) compensation for the infiltration and exfiltration effects caused by wind impinging on the reactor building structure. As the wind speed increases, the test acceptance criteria (required D/P during drawdown test) requires a more negative D/P because building exfiltration of air will increase. The inspectors reviewed the underlying design analysis for the drawdown surveillance test acceptance criteria and the corrective actions outlined in CR 2009-001389. In addition, the adequacy of the test was also reviewed as well as the impact of wind speeds greater than 20 MPH on RBEV system operability.

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The inspectors also reviewed the Unit 2 SBTG drawdown test criteria to determine if the criteria was sufficiently conservative such that building D/P compensation for wind speed was not required.

b. Findings and Observations

The inspectors determined that the test standard for Unit 1 was appropriate and that wind speeds greater than 20 MPH that exceeded the test criteria did not require declaring the RBEV inoperable. The Unit 1 surveillance test could not be conducted when wind speeds were greater than 20 MPH because of computer modeling limitations for building air infiltration. The inspectors verified that the Unit 2 SBTG system air removal capacity was adequate (when compared to Unit 1) to ensure surveillance test integrity without compensation for wind speed.

.4 Semi-annual Review to Identify Trends

a. Inspection Scope

As specified by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into NMPNS's CAP. In accordance with the baseline inspection procedures, the inspectors also identified selected CAP items across the Initiating Events, Mitigating Systems, and Barrier Integrity cornerstones for additional follow-up and review. The inspectors also reviewed the Department Quarterly Trend Reports and compared the number of CRs initiated in each area for trends. The inspectors assessed the threshold for problem identification, the adequacy of the cause analyses, extent of condition review, operability determinations, and the timeliness of the specified corrective actions.

b. Findings and Observations

No findings were identified. No trends were noted that indicated a potential safety significant issue. The inspectors verified that NMPNS appropriately identified trends and captured them in the CAP, performance monitoring program, system health reports, and quality assurance assessments. Examples of trends identified by NMPNS were trends in the areas of procedure use and adherence, and reliability of the offsite siren notification system.

4OA3 Followup of Events and Notices of Enforcement Discretion (71153 - One sample)

.1 Unit 1 Reactor Scram Due to Main Turbine Control System Pressure Oscillations

a. Inspection Scope

On May 2, 2011, at 2051 NMPNS Unit 1 automatically scrambled from 47 percent power when the main turbine tripped due to a turbine trip signal from the emergency governor.

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At the time of the event, reactor power was being held at 47 percent to support troubleshooting on the turbine shaft driven feedwater pump, which had been removed from service due to high vibrations encountered during the plant power ascension program following the refuel outage.

Operators responded to the reactor scram in accordance with the applicable emergency and special operating procedures. The HPCI system initiated as designed due to the transient low reactor pressure vessel (RPV) water level following the scram. Operators reset the HPCI initiation signal and took manual control of the RPV water level. A normal cool down was performed and cold shutdown was achieved the following day.

The inspectors responded to the control room and observed operators' responses to the event. The inspectors verified that operators responded in accordance with the applicable procedures. The inspectors confirmed that no emergency plan emergency action level (EAL) thresholds had been exceeded, and that the event was appropriately reported to the NRC.

The inspectors reviewed the circumstances surrounding the event. As part of the review the inspectors interviewed plant operators, examined computer printouts, and observed NMPNS troubleshooting efforts. The inspectors also attended several plant status meetings and a plant operations review committee meeting where the post scram review was conducted.

b. Findings

Introduction: A Green self revealing finding for inadequate procedural guidance was identified. The inadequate procedural guidance resulted in a May 2, 2011 Nine Mile Unit 1 scram due to a turbine trip. NMPNS determined that the turbine tripped when the main turbine master trip solenoid (MTS) actuated due to pressure fluctuations caused by a combination of leaking oil supply fittings to the MTS; binding of the secondary speed relay linkages, and main shaft lube oil discharge pressure fluctuations. These degraded conditions occurred because the governing work control documents and procedures that were implemented during the spring 2011 refuel outage, contained inadequate detail and guidance. NMPNS corrective actions included repairing the degraded components and initiating actions to revise the procedures.

Description: NMPNS Unit 1 main turbine and electrical generator systems include a high pressure turbine, three low pressure turbines, a main generator, exciter, and shaft-driven main feedwater pump that is connected to the main turbine through a clutch and reduction gear. The generator exciter is also driven off the main turbine shaft through a reduction gear. To minimize the buildup of static electricity and circulating currents on the main turbine shaft, an insulating coupling is installed between the main generator and exciter and grounding straps that 'ride' on the main turbine rotor are installed.

During the spring 2011 refuel outage, which lasted from March 21 to April 18, NMPNS and supplemental vendor personnel conducted a number of planned maintenance activities on the main turbine and electrical generator systems. These activities required removal of the main generator rotor and exciter, replacement of a stator bar in the main

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generator, and refurbishment of the shaft-driven main feedwater pump impeller. Components that provide input to the mechanical pressure regulator (MPR), including the speed sensing relay (SSR), were also inspected as part of an investigation into control oil pressure oscillations that occurred when the MPR was placed into service during the previous operating cycle. The majority of these maintenance activities were conducted by supplemental workers.

Following startup from the spring 2011 outage, NMPNS experienced a number of problems associated with the main turbine and electrical generator systems. These issues included control oil pressure oscillations when the MPR was in service, high levels of vibration emanating from the main turbine in the area where the shaft-driven feedwater pump is located, abnormal levels of noise, and unexpected wear on the main generator rotor grounding straps. In response to these issues, NMPNS implemented a number of corrective actions that included decreasing plant power and removing the shaft-driven feedwater pump from service, installing additional monitoring equipment on the main turbine and electrical generator systems, and utilizing engineering and technical support from offsite personnel.

On May 2, 2011, with the plant at 47 percent power to support troubleshooting operations, a reactor scram occurred when the main turbine tripped. Following the scram, the reactor plant was placed in cold shutdown and NMPNS began troubleshooting efforts on the main turbine and electrical generator systems. The troubleshooting identified that a number of components had not been correctly assembled or inspected during the spring refuel outage and as a result, important systems associated with the main turbine and electrical generator were not properly operating. As a result, oil pressure oscillations in the turbine control system occurred, which caused the main turbine master trip solenoid to actuate initiating a turbine trip.

In response to the plant scram and subsequent discovery of equipment damage, NMPNS established a NMPNS Category 1 Root Cause Analysis team. The team determined that the turbine tripped because of pressure oscillations in the main turbine control system. The pressure oscillations were caused by several components in main turbine and electrical generator systems that were not correctly assembled and/or inspected during the outage, including the oil supply fittings to the MTS, an insulation coupling on main turbine shaft, and the SSR on the MPR system. The team concluded that the components were not correctly assembled because inadequate implementation of management job performance standards in the turbine services organization resulted in the development and implementation of work performance documents, which lacked sufficient detail to effectively supervise supplemental work personnel performance of turbine maintenance activities and identify critical steps. For example, the work order for disassembly and reassembly for the main turbine insulating coupling lacked sufficient detail to ensure the coupling was properly installed. The work order C90697642, "Perform Exciter Inspection per GE Scope," directed the coupling to be installed in accordance with manual GEK7607. However, the manual does not contain assembly or post maintenance testing requirements. As a result, during reassembly a locking tab was not correctly installed causing an electrical short circuit that resulted in damage to the main turbine journal bearings, reduction gears, and main turbine shaft driven oil pump.

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Constellation Nuclear Generation Fleet Directive CNG-MN-1.01, "Conduct of Maintenance," Revision 0000, establishes requirements for performing maintenance activities at NMPNS. Section 6.2B of CNG-MN-1.01 states, in part, that approved procedures or instructions shall be clear, technically adequate and provide appropriate direction for execution and record documentation. The inspectors determined that during the refuel outage, NMPNS did not provide personnel who were performing maintenance on main turbine and electrical generator systems with the procedures, equipment, oversight and training necessary to correctly perform maintenance activities. As a result, several components in the main turbine and electrical generator systems were not correctly assembled, which necessitated a plant downpower to troubleshoot high vibrations on the main turbine area and resulted in a May 2, 2011, reactor scram. This issue has a cross-cutting aspect in the area of human performance in that NMPNS did not ensure that complete and accurate, and up-to-date design documentation and procedures were available to implement turbine maintenance during the spring 2011 refuel outage.

Analysis: The performance deficiency associated with this finding is that contrary to the guidance contained in CNG-MN-1-01, "Conduct of Maintenance," NMPNS did not provide adequate procedures and work instructions to personnel associated with the maintenance and testing of the main turbine and associated components during the spring 2011 refuel outage. This finding is more than minor because it affected the procedure quality attribute of the Initiating Events Cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, because maintenance personnel were not provided with adequate procedures and work instructions for conducting maintenance and testing on the main turbine during the spring 2011 refuel outage, several components were not correctly assembled. This eventually resulted in a plant scram. This example is also similar to NRC Inspection Manual Chapter 0612, Appendix E, Examples of Minor Issues, and Example 4.b where a procedure error resulted in a reactor plant trip.

The inspectors determined that the finding was of very low safety significance (Green) through performance of a Phase 1 SDP in accordance with IMC 0609.04, Table 4a, "Characterization Worksheet for IE, MS and BI Cornerstones." Specifically, the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. This finding has a cross-cutting aspect in the area of human performance in that NMPNS did not ensure that complete and accurate, and up-to-date design documentation and procedures were available to implement turbine maintenance during the spring 2011 refuel outage. (H.2.c per IMC 0310).

Enforcement: Enforcement action does not apply because this performance deficiency did not involve a violation of a regulatory requirement. Specifically the main turbine and electrical generating components are not safety related. As such the applicable maintenance and surveillance procedures are not governed by the requirements of NMPNS Unit Technical Specification 6.4 'Procedures.' This issue was entered into NMPNS CAP (2011-4459). Because this finding does not involve a violation of

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regulatory requirements and has very low safety significance, it is identified as a finding. **(FIN 05000220/2011003-01, Inadequate Procedural Guidance for Main Turbine and Generator Maintenance Activities)**

.2 Unit 1 Notification of an Unusual Event Due to Fire in Turbine Building

a. Inspection Scope

At 7:40 am, on June 25, 2011, a confirmed fire was identified in the Unit 1 TB. The fire was located in nonsafety-related 480 volt AC power board H -12, and was initially indicated by an alarm on a local fire panel. The fire brigade promptly responded and extinguished the fire by 8:15 am. NMP declared an UE in accordance with EAL 8.2.1 for a fire not extinguished within less than or equal to 15 minutes of control room notification.

The inspector responded to the control room, verified that operators responded in accordance with applicable procedures, and confirmed that the event was appropriately reported to local agencies and the NRC.

b. Findings

No findings were identified.

4OA5 Other Activities

.1 Institute of Nuclear Power Operations (INPO) Report Review

a. Inspection Scope

The inspectors reviewed a February 28, 2011, report issued by INPO that assessed plant performance at NMPNS for the period of July 2008 to August 2010. The report primarily relied on observations made by INPO representatives during the weeks of July 12, August 16 and August 23, 2010.

The inspectors reviewed a June 24, 2011, INPO report that documented the results of an accreditation team evaluation of the maintenance, chemistry and radiological protection technical training programs performed at NMPNS during the week of January 31 to February 4, 2011.

The inspectors reviewed the reports to ensure that issues identified were consistent with the NRC perspectives of plant performance and to verify if any significant issues were identified that required further NRC follow-up.

b. Findings

No findings were identified.

2. (Closed) NRC Temporary Instruction 2515/183, "Followup to the Fukushima Daiichi Nuclear Station Fuel Damage Event"

a. Inspection Scope

The inspectors assessed the activities and actions taken by NMPNS to assess its readiness to respond to an event similar to the Fukushima Daiichi nuclear plant fuel damage event. This included (1) an assessment of NMPNS' capability to mitigate conditions that may result from beyond design basis events, with a particular emphasis on strategies related to the spent fuel pool, as required by NRC Security Order Section B.5.b issued February 25, 2002, as committed to in severe accident management guidelines, and as required by 10 CFR Part 50.54(hh); (2) an assessment of NMPNS's capability to mitigate station blackout (SBO) conditions, as required by 10 CFR Part 50.63 and station design bases; (3) an assessment of NMPNS' capability to mitigate internal and external flooding events, as required by station design bases; and (4) an assessment of the thoroughness of the walkdowns and inspections of important equipment needed to mitigate fire and flood events, which were performed by NMPNS to identify any potential loss of function of this equipment during seismic events possible for the site.

Inspection Report 05000220/2011010 and 05000410/2011010 (ML111320448) documented detailed results of this inspection activity.

b. Findings

No findings were identified.

3. (Closed) NRC Temporary Instruction 2515/184, "Availability and Readiness Inspection of Severe Accident Management Guidelines (SAMGs)"

a. Inspection Scope

On May 16, 2011, the inspectors completed a review of NMPNS severe accident management guidelines (SAMGs), implemented as a voluntary industry initiative in the 1990's, to determine (1) whether the SAMGs were available and updated, (2) whether NMPNS had procedures and processes in place to control and update its SAMGs, (3) the nature and extent of NMPNS training of personnel on the use of SAMGs, and (4) NMPNS personnel's familiarity with SAMG implementation.

The results of this review were provided to the NRC task force chartered by the Executive Director for Operations to conduct a near-term evaluation of the need for agency actions following the Fukushima Daiichi fuel damage event in Japan. Plant-specific results for NMPNS were provided in an Attachment to a memorandum to the Chief, Reactor Inspection Branch, Division of Inspection and Regional Support, dated May 27, 2011 (ML111470361).

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b. Findings

No findings were identified.

.4 Strike Preparation (92709 – One sample)

a. Inspection Scope

The inspectors reviewed NMPNS's approved strike contingency plan. The items reviewed included staffing requirements for meeting minimum on-site shift staffing; the qualifications of personnel performing licensed activities per 10 CFR Parts 55.53(e) and (f); and guidance provided for NMPNS to meet regulatory requirements in the area of operations, chemistry and radiation protection, as well as administrative controls. Records were reviewed to verify that NMPNS properly trained non-licensed personnel who will be performing functions to which they are not normally assigned (plant operators, building rounds and fire brigade). The inspectors also reviewed the plan to ensure site staffing will be sufficient and qualified to implement the site emergency plan by comparing the contingency emergency response organization (ERO) staffing plan to the normal ERO staffing plan.

b. Findings

No findings were identified.

.5 (Closed) Severity Level IV Non-Cited Violation (NCV) NRC Investigation Report No. 1-2010-033, Intentional Bypass of Whole Body Personnel Contamination Monitor to Exit Radiologically Controlled Area (92702)

This Severity Level IV NCV, identified on April 15, 2010, stated that contrary to Nine Mile Point Unit 2 Technical Specification 5.4.1 and procedure GAP-RPP-01, "Radiation Protection Program," a non-licensed operator exited the radiologically controlled area (RCA) without first monitoring himself for contamination in a whole body personnel contamination monitor (WBCM). This violation was documented in a December 28, 2010, NRC letter to Nine Mile Point Nuclear Station. NMPNS determined that the operator intentionally exited the RCA without using the WBCM in order to avoid a long line waiting to use the monitor. Additionally, NMPNS concluded that this was an isolated human performance issue and therefore, extensive corrective actions were not warranted. However, action was taken against the individual by NMPNS. The inspectors also noted that the exit point from the Unit 2 RCA was recently reconfigured to be more user friendly and efficient.

The inspectors reviewed the actions taken by NMPNS and concluded that they were appropriate and timely. This violation is closed. **(NCV 05000410/2010008-01: Deliberately Failing to Use a Whole Body Contamination Monitor When Exiting the Radiologically Controlled Area)**

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.6 (Closed) Severity Level IV NCV NRC Investigation Report No. 1-2010-026, Intentional Failure to Follow Procedure (92702)

This Severity Level IV NCV, identified on March 10, 2010, stated that contrary to 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," and Constellation procedure CNG-CA-1.01, "Corrective Action Program," a system engineer failed to immediately notify his supervision of a failed surveillance test, which was required since it constituted a condition adverse to quality. This violation was documented in a March 24, 2010, NRC letter to Nine Mile Point Nuclear Station. NMPNS determined that this was a one time act by one individual; in order to avoid a personal impact, the individual rationalized the acceptability of deciding to not immediately notify supervision since work could not immediately commence as filter media needed to be ordered. Additionally, NMPNS concluded that newer employees may not completely appreciate the importance of communicating safety issues, and the surveillance procedure was less than adequate to ensure filter media would be appropriately changed out. Corrective actions taken by NMPNS included: disciplinary action was taken against the individual; work completed by the individual was reviewed for potential similar issues; all system engineering personnel were briefed regarding this event and deliberate misconduct; training was revised for initial engineers regarding this event and deliberate misconduct; the surveillance procedure was revised; and a safety culture assessment was conducted of the engineering department.

The inspectors reviewed NMPNS's cause determination and corrective actions taken to ensure they were appropriate and complete. The inspectors discussed the corrective actions taken with plant personnel, and reviewed lesson plans and the safety culture assessment. The inspectors concluded that the cause determination was thorough and corrective actions taken were appropriate and timely. This violation is closed. **(NCV 05000220/2011009-01: Intentional Failure to Follow Procedure)**

4OA6 Meetings

Exit Meeting

The inspectors presented the inspection results to Mr. Sam Belcher and other members of NMPNS management at the conclusion of the inspection on July 28, 2011. The inspectors asked NMPNS whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT: SUPPLEMENTAL INFORMATION

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SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

NMPNS Personnel

S. Belcher, Vice President
T. Lynch, Plant General Manager
P. Amway, Unit 2 SRO / Reactivity SRO for the Recirc Pump Full Flow Test
P. Bartolini, Supervisor, Design Engineering
J. Dean, Supervisor, Quality Assurance
R. Dean, Training Manager
S. Dhar, Design Engineering
J. Dosa, Director, Licensing
J. Holton, Supervisor, Systems Engineering
J. Kaminski, Director, Emergency Preparedness
M. Kunzwiler, Security Supervisor and Fatigue Rule Program Coordinator
J. Manley, Unit 2 Shift Manager
F. Payne, Unit 1 General Supervisor Operations
M. Philippon, Manager, Operations
J. Sawyer, Unit 2 Control Room Supervisor
M. Shambhag, Licensing Engineer
H. Strahley, Unit 2 General Supervisor Operations
T. Syrell, Manager, Nuclear Safety and Security
J. Thompson, Reactor Recirc Full Flow Test Coordinator
P. Walsh, Shift Manager, RTN

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Opened and Closed

05000220/20110003-01

FIN

Inadequate Procedural
Guidance for Main Turbine
and Generator Maintenance
Activities

A-2

Closed

05000410/2010008-01	NCV	Deliberately Failing to Use a Whole Body Contamination Monitor When Exiting the Radiologically Controlled Area
05000220/2011009-01	NCV	Intentional Failure to Follow Procedure
NRC Temporary Instruction 2515/183	TI	Followup to the Fukushima Daiichi Nuclear Station Fuel Damage Event
NRC Temporary Instruction 2515/184	TI	Availability and Readiness Inspection of Severe Accident Management Guidelines

Discussed

None

Attachment

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

N1-OP-64, "Meteorological Monitoring," Revision 00400
N2-OP-102, "Meteorological Monitoring," Revision 01000
NAI-PSH-11, "Seasonal Readiness Program," Revision 00700
EPIP-EPP-26, "Natural Hazard Preparation and Recovery," Revision 00300
Unit 1 Individual Plant Examination for External Events
S-ODP-OPS-0112, "Off-Site Power Operations and Interface," Revision 01500
N1-SOP-33A.3, "Major 115 KV Grid Disturbances," Revision 01
N2-SOP-70, "Major Grid Disturbances," Revision 01
N1-OP-64, "Meteorological Monitoring," Revision 00200
N2-OP-102, "Meteorological Monitoring," Revision 00800
N2-PM-A001, "Annual Draining and Refilling of ACUs and Cooling Coils," Revision 00001
N2-OP-54B, "Ventilation - Chilled Water (Lithium Bromide)," Revision 04
N2-PM-A004, "Annual Removal and Installment of HVR Supply Prefilters," Revision 00001

Section 1R04: Equipment Alignment

Procedures

NIP-CRH-01, "Control Room Integrity Program," Revision 000500
N1-FST-FPP-C001, "Fire Barrier/Penetration Sealing Inspection Emergency Cooling System,"
Revision 00800

Drawings

C-18047-C, Control Room Heating Ventilation and Air Conditioning System, Revision 28
C-18016-C, Control Rods Drive, Revision 42

Condition Reports

2011-005033	2011-005166
2011-005131	2011-005167

Section 1R05: Fire Protection

Procedures

N1-FPI-PFP-0101, "Unit 1 Pre-fire Plans," Revision 01
N2-FPI-PFP-0201, "Unit 2 Pre-fire Plans," Revision 02

Documents

Unit 2 UFSAR, Appendix 9A, "Degree of Compliance With Branch Technical Position CMEB
9.5-1, Revision 2 Dated July 1981," Revision 18
Unit 1 UFSAR, Appendix 10A, "Fire Hazards Analysis"

Section 1R07: Heat Sink Performance

Procedures

NMPNS Chemistry Technical Procedure, S-CTP-V666, "Auxiliary Systems Chemistry," Revision 00900, 4/3/11
NMPNS Unit 1, Mechanical Maintenance Procedure, NI-NMP-054-405, "Maintenance of Fuel Pool Heat Exchanger," Revision 00400, 10/14/10

Program Documents

Constellation Energy Group Nine Mile Point Nuclear Station Unit 1 and Unit 2, August 2009; NMPNS-HX-002, "Balance of Plant Heat Exchanger Program Plan," Revision 03, 8/27/09
Constellation Energy Group Nine Mile Point Nuclear Station Unit 1 and Unit 2, "NMPNS - HX-001," Revision 03; Generic Letter 89-13, "Heat Exchanger Program Plan," 8/27/09
Component Classification Sheet, "2SFC*E1B, "Spent Fuel Pool Cooling Heat Exchanger Unit 2"
Heat Exchanger Specification Sheet P.O. No. NMP2-P221X, "Spent Fuel Pool Cooling Water Heat Exchanger"
Maintenance Review Strategy for Component, 2SFC*E1B, "Spent Fuel Pool Cooling Heat Exchanger Unit 2; Classified – Significant, Low Duty Cycle"
Maintenance Review Strategy for Component, 2SFC*E2B, "Spent Fuel Pool Cooling Heat Exchanger Unit 2; Classified – Significant, Low Duty Cycle"
Maintenance Review Strategy for Component HTX-54-04, Unit 1 "Spent Fuel Pool Cooling Heat Exchanger 12; Classified – Significant, High Duty Cycle"
Maintenance Review Strategy for Component HTX-54-04, Unit 1, "Spent Fuel Pool Cooling Heat Exchanger 11; Classified – Significant, High Duty Cycle"

Corrective Action Reports

2011-004551
2011-004556

Inspection Summary Sheets

NDE Report #BOP-ET-11-004, Eddy Current Inspection Report; Unit 1, Spent Fuel Pool Cooling Heat Exchanger – Partial Inspection, 1/20/11

Licensing Documents

Nine Mile Point Unit 1, UFSAR, Section X-H, "Spent Fuel Storage Pool Filtering and Cooling System," October 2007
Nine Mile Point Unit 2, UFSAR, Section 9.1.3, "Spent Fuel Pool Cooling and Cleanup System," November 1998

Section 1R08: Inservice Inspection Activities

Corrective Action and Tracking Reports:

CR-2011-002755, CR-2011-003018*, CR-2011-003058*, CR-2011-003169*
AI-2010-001134-005*

*Denotes this Report was generated as a result of this inspection

Program Documents:

EPRI Demonstration Documentation Letter 2011-042 for BWRVIP UT Examination of Core Shroud Welds H8 and H9

Report No. NER-1S-016, Revision 6. NMP U1 Torus External Structure Walkdown Results
QA Audit Report SPC-10-01-N dated 11/23/2010 on Special Processes, Testing & Inspection

Procedures:

WDI-SSP-1105, Revision 1. Automated UT of Dissimilar Metal Welds using WDI-STD-119A
WDI-SSP-1192, Revision 0. Manual Phased Array UT of Dissimilar Metal Welds
ISwT-BWRVIP-AUT54, Revision 0. Automated Phased Array UT of Core shroud Welds H8 and H9 at Nine Mile Point
WDI-SSP-015, Revision 003. Automated UT Core Spray Assembly welds using the Intraspect System
WDI-SSP-017, Revision 002. Automated Phased Array UT Core Spray Assembly welds using the Intraspect System
NDE Procedure NDEP-UT-6.24, Revision 011. UT examination of Austenitic Piping Welds
NDE Procedure NDEP-VT-2.01, Revision 19. ASME Section XI Visual Examination
NDE Procedure NDEP-VT-2.07, Revision 12. In-Vessel Visual Examination
NDE Procedure NDEP-PT-3.00, Revision 01701. Liquid Penetrant Examination
NDE Procedure NDEP-MT-4.00, Revision 01600. Magnetic Particle Examination

NDE Examination Reports & Data Sheets:

UT Calibration / Examination Documentation for component 39-WD, welds 203R, 204R & 203A, done under WO No. C90640268
UT Calibration / Examination Documentation for component 40-WD-35, pipe to reducer weld, done under WO No. C90640268
UT Calibration / Examination Documentation for component 39-WD-090, N5B Nozzle-to-Safe End welds, Summary No. 282700

Drawings:

E-231-576 RPV Head to nozzle weld details
E-231-566 RPV Shell to Emergency Condenser nozzle weld details
Figure 6.2-1 BWR/2 Core Spray Piping Configuration for welds P8, P5, P6, and P7

Section 1R11: Licensed Operator Regualification Program

Procedures

N1-SOP-1.1, "Emergency Power Reduction," Revision 00200
N1-OP-11, "RBCLC Failure," Revision 0400
N1-SOP-1, "Reactor Scram," Revision 02100
N1-EOP-2, "RPV Control Flowchart," Revision 01400
N1-EOP-5, "Secondary Containment Control Flowchart," Revision 01400
N2-OP-31, "Residual Heat Removal System," Revision 13
N2-SOP-30, "Control Rod Drive Failures," Revision 0300
N2-SOP-34, "Stuck Open Safety Relief Valve," Revision 0300
N2-SOP-101C, "Reactor Scram" Revision 00500
N2-EOP-RPV, RPV Control – Flowchart," Revision 01300

N2-EOP-PC, "Primary Containment Control – Flowchart," Revision 12
 N2-EOP-C4, "RPV Flooding – Flowchart," Revision 01300
 N2-EOP-SC, "Secondary Containment Control," Revision 10
 EPIP-EPP-01, "Classification of Emergency Conditions at Unit 1," Revision 21
 EPIP-EPP-02, "Classification of Emergency Conditions at Unit 2," Revision 19

Section 1R12: Maintenance Effectiveness

Program Documents:

CNG-AM-1.01-1023, "Maintenance Rule Program," Revision 00100
 System Health Reports, Control Room HVAC, from June 30, 2010 through March 31, 2011

Condition Reports

2010-006442	2010-009170	2010-011290
2010-007510	2010-010059	2010-012050
2010-007949	2010-010089	2011-002395
2010-008114	2010-010706	2011-003427
2010-008406	2010-010975	2011-005052
2010-008478	2010-010984	2011-005152

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

CNG-OP-4.01-1000, "Integrated Risk Management," Revision 00800

Section 1R15: Operability Determinations and Functionality Assessments

Condition Reports

CR-2007-007255
 CR-2002-003322
 CR-2002-001665
 CR-2002-001677
 CR-2011-004557
 CR-2011-005008
 CR-2011-005167

Section 1R19: Post-Maintenance Testing

Procedures

N1-NMP-039-217, "Maintenance of Emergency Condenser Isolation Valves," Revision 00201
 N1-ISP-LRT-TYC, "Type C Containment Local Leak Rate Test," Revision 00700

Documents

Unit 1 Technical Specification 3.3.8.1

Work Orders

C91269745, Disassemble, Inspect, Repair Bonnet Leak on IV-39-07R and IV-39-08R.
 C90652902, Retest IV-39-07R
 C91236257, Inspect and Clean seal areas of valves IV-201-31 and IV-201-32
 C91270094, PMT, IV-201-31 and IV-201-32

Condition Reports

CR-2011-003826

Section 1R20 Refueling and Other Outage ActivitiesCondition Reports

2011-003791

Section 1R22: Surveillance TestingProcedures

N1-TTP-054, "Control Room Tracer Gas Testing," Revision 00
 N1-ST-Q1D, "CS 122 Pump and Valve Operability Test," Revision 00600;
 N1-ST-C9, "Control Room Emergency Ventilation System Operability Test," Revision 1501
 N2-TTP-RCS-001, "Reactor Recirculation System Full Flow Test," Revision 00100 completed
 June 4, 2011
 TARs 8 point trend data for N2-TTP-RCS-001
 RCS A and B Current for N2-TTP-RCS-001
 Maximum Core Flow Capability Test Data dated June 4, 2011
 N1-ST-Q6D, "Containment Spray System Loop 122 Quarterly Operability Test," Revision 00801;
 N1- ST-R30, "Reactor Pressure Vessel and ASME Class 1 System Leakage Test," Revision
 00600;

Documents

ISI-VT-11-086(reject)	ISI-VT-11-099	ISI-VT-11-130
ISI-VT-11-087	ISI-VT-11-100(reject)	ISI-VT-11-131
ISI-VT-11-088	ISI-VT-11-101(reject)	ISI-VT-11-132
ISI-VT-11-089	ISI-VT-11-102(reject)	ISI-VT-11-133
ISI-VT-11-090	ISI-VT-11-103(reject)	ISI-VT-11-134
ISI-VT-11-091	ISI-VT-11-104	ISI-VT-11-135
ISI-VT-11-092	ISI-VT-11-123	ISI-VT-11-136
ISI-VT-11-093	ISI-VT-11-124	ISI-VT-11-137
ISI-VT-11-094	ISI-VT-11-125	ISI-VT-11-138
ISI-VT-11-095	ISI-VT-11-126	ISI-VT-11-139
ISI-VT-11-096	ISI-VT-11-127	ISI-VT-11-140
ISI-VT-11-097	ISI-VT-11-128	ISI-VT-11-141
ISI-VT-11-098	ISI-VT-11-129	ISI-VT-11-142

Section 2RS1: Radiological Hazard Assessment and Exposure Controls

RWPs: 111890; 111805; 111823; 111810; 111806; 111802

Section 2RS2: Occupational ALARA Planning and Controls

ALARA Reviews: 111890; 111805; 111823; 111810; 111806; 111802
 Nine Mile Point Unit 1 RFO21 Radiation Protection Pre-Outage Report

Section 4OA1: Performance Indicator Verification

Unit 1 and 2 Performance Indicator Charts and Data – first quarter 2011
 N2-CSP-RCS-W102, "Dose Equivalent Iodine-131", Revision 03
 N2-CSP-GEN-D100, "Reactor Water Chemistry Surveillance", Revision 05
 N1-CSP-D100, "Reactor Coolant Chemistry, Revision 010000

Section 4OA2: Problem Identification and Resolution**Condition Reports**

2009-001389	2011-004272	2011-004246
2011-003892	2011-004229	2011-003168
2011-005896	2011-005152	2011-005532
2011-006013	2011-004536	2011-005331
2011-005596	2011-004514	2011-005467
2011-006003	2011-004459	2011-005399
2011-005793	2011-004446	
2011-003378	2011-004449	
2011-003680	2011-004458	

Documents

Calculation H21C092, "Unit 1 LOCA with LOOP, AST Methodology," Revision 01
 Calculation S0-GOTHIC-DD01, "NMP1 Reactor Building Drawdown for AST," Revision 01
 Design Data Base for Application of the Alternative DBA Source Term to Nine Mile Point Unit 1,
 Revision 2

Nine Mile Point Unit 1 FSAR Revision 21:

Chapter VI Section C 1.0, "Secondary Containment – Reactor Building,"

Chapter XV Section C.7.4, "Exfiltration,"

Nine Mile Point Unit 1 Technical Specification 3.4.1 and 3.4.4 and Bases

Nine Mile Point Unit 2 FSAR Chapter 6 section 6.2, "Containment Systems", Revision 18

Nine Mile Point Unit 2 Technical Specification 3.6.4.1 and 3.6.4.3 and Bases

Nine Mile Point Quarterly Station Leadership Performance Assessment dated May 12, 2011

Section 40A3: Follow-up of Events and Notices of Enforcement Discretion

Procedures

EPIP-EPP-01, "Classification of Emergency Conditions At Unit 1," Revision 01900

EPIP-EPP-28, "Firefighting," Revision 01600

N1-SOP-21.1, "Fire In Plant," Revision 00400

CNG-MN-1-01, "Conduct of Maintenance" Revision 0000

S-MAP-MAI-0106, "Nine Mile Point Turbine Generator Maintenance Program" Revision 01000

Condition Reports

2011-004459

2011-004563

2011-006003

Section 40A5: Other Activities

Procedures

ESP-FIC-ROLENPE, Role of the Nuclear Power Plant Engineer, Revision 1

Documents

CA-2010-001446, Safety Culture Assessment, Engineering Department

Condition Reports

2010-002197

2010-002106

2010-003826

LIST OF ACRONYMS

AC	alternating current
ADAMS	Agencywide Documents Access and Management System
ALARA	as low as is reasonably achievable
ASME	American Society of Mechanical Engineers
CAP	corrective action program
CFR	Code of Federal Regulations
CR	condition report
DBD	design basis document
D/P	delta pressure
EAL	emergency action level
EDG	emergency diesel generator
EOP	emergency operating procedure
EPD	electron personal dosimeter
EPRI	Electric Power Research Institute
ERO	emergency response organization
HPCI	high pressure coolant injection
HRA	high radiation area
IMC	Inspection Manual Chapter
LORT	licensed operator requalification training
MPH	mile per hour
MPR	mechanical pressure regulator
MTS	master trip solenoid
NDE	nondestructive examination
NEI	Nuclear Energy Institute
NMPNS	Nine Mile Point Nuclear Station, LLC
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
PI	performance indicator
PMT	post maintenance test
RB	reactor building
RBEV	reactor building emergency ventilation
RCS	reactor coolant system
RFO	refueling outage
RPV	reactor pressure vessel
RTP	rated thermal power
RWP	radiation work permit
SAMG	severe accident management guideline
SBGT	standby gas treatment
SDP	significance determination process
SOP	special operating procedure
SSR	speed sensing relay
SW	service water
TB	turbine building
TS	technical specification

UE	unusual event
UFSAR	updated final safety analysis report
UT	ultrasonic test
VT	visual testing
WO	work order